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Mycoplasma pneumoniae-associated flagellate erythema

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Abstract: We recently described mucocutaneous findings in pediatric patients with community-acquired pneumonia caused by *Mycoplasma pneumoniae*, 1 of whom 3 (6.8%) were diagnosed with *M. pneumoniae*-induced rash and mucositis (MIRM).^{2,3} We wish to describe another MIRM patient, who recently presented with a unique clinical picture following the resolution of MIRM, which is, to our knowledge, the first case of *M. pneumoniae*-associated flagellate erythema.

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Mycoplasma pneumoniae—associated flagellate erythema



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Key words: MIRM; mucositis; rash; reactive infectious mucocutaneous eruption; RIME.

INTRODUCTION

We recently described mucocutaneous findings in pediatric patients with community-acquired pneumonia caused by *Mycoplasma pneumoniae*,¹ of whom 3 (6.8%) were diagnosed with *M pneumoniae*—induced rash and mucositis (MIRM).^{2,3} We wish to describe another MIRM patient, who recently presented with a unique clinical picture following the resolution of MIRM, which is, to our knowledge, the first case of *M pneumoniae*—associated flagellate erythema.

CASE REPORT

A previously healthy 12-year-old boy was hospitalized for 2 weeks because of MIRM, characterized by severe oral, ocular, and urogenital mucositis (Fig 1). Chest radiograph showed atypical pneumonia, and test results for *M pneumoniae* were positive from a pharyngeal swab sample by polymerase chain reaction (PCR) and from a blood sample by serologic testing (IgM > 150 U/mL, cutoff 17 U/mL; IgG 23 U/mL, cutoff 15 U/mL) (Virion/Serion). IgM antibody-secreting cells were detected by enzyme-linked immunospot assay.^{4,5} The patient was treated with doxycycline (2 mg/kg, twice daily for 7 days), methylprednisolone (3 mg/kg, once daily for 3 days), and supportive therapy.

After 4 weeks, when the patient had complete resolution of his mucositis, he developed a peculiar rash over the thorax and flank (Fig 2, A) and on the back (Fig 2, B). Physical examination revealed parallel, erythematous, slightly purpuric streaks, consistent with flagellate erythema. The lesions were

Abbreviations used:

MIRM: *Mycoplasma pneumoniae*—induced rash and mucositis
PCR: polymerase chain reaction



Fig 1. MIRM. MIRM, *Mycoplasma pneumoniae*—induced rash and mucositis.

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Fig 2. Flagellate erythema on the thorax and flank (**A**) and on the back (**B**).



Fig 3. Flagellate erythema on the anterior aspect of the thorax.

neither painful nor pruritic and resolved after several days with topical corticosteroid treatment. The patient was always in a good general condition, had no fever, denied scratching or any other trauma to the

skin, and did not take any medications or consume shiitake mushrooms. Laboratory studies showed a normal white blood cell count ($7640/\mu\text{L}$) and C-reactive protein level ($<0.4 \text{ mg/L}$). Rheumatoid factor and antinuclear antibodies were absent. Patch testing result with the agents used for supportive therapy during the MIRM episode was negative. *M pneumoniae* was still detectable by PCR, and the serologic testing results (IgM $> 150 \text{ U/mL}$, IgG 35 U/mL) and enzyme-linked immunospot assay results for IgM antibody-secreting cells remained positive.

Another episode of flagellate erythema on the anterior aspect of the thorax occurred 3 months later (Fig 3), at which time the serology was still positive (IgM 130 U/mL , IgG 22 U/mL) but the results of PCR and the enzyme-linked immunospot assay for IgM antibody-secreting cells were negative. No recurrences have been observed since then.

DISCUSSION

Flagellate erythema is characterized by parallel, linearly arranged lesions mainly located on the back and shoulders⁶ and is very rarely observed in children.⁷ The exact pathologic mechanism remains unknown. The differential diagnosis of flagellate erythema includes bleomycin treatment, dermatomyositis, adult-onset Still disease, and consumption of uncooked shiitake mushrooms.⁶⁻⁹ The ongoing and pronounced specific immune response against *M pneumoniae* at the onset of flagellate erythema after the pulmonary infection supports a causal

relationship and is in line with the proposed immune-mediated pathogenesis of *M pneumoniae*-induced mucocutaneous disease.¹ This report may add flagellate erythema to the diverse dermatologic manifestations associated with *M pneumoniae*.

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